

Customer No.: 31561  
Docket No.: 12475-US-PA  
Application No.: 10/710,622

### REMARKS

#### Present Status of the Application

The Office Action rejected claims 1-20 and 22-31 under 35 U.S.C. 102(e) as being unpatentable by Matsumoto (US 2004/0058540) (hereinafter Matsumoto). In response thereto, Applicants respectfully traverse these rejections for at least the reasons set forth below.

The features are recited in claims 1, 10 and 22. For example, independent claim 1 recited the features.

With respect to claim 1, independent claim 1 recites the features as follows:

1. A method of correcting a lithographic process,  
comprising the steps of:

...

performing a physical vapor deposition (PVD) process to form a thin film over a wafer, wherein an overlay mark on the wafer has a positional shift that depends on the target consumption in the PVD process and a formula relating the two can be derived;

... (Emphasis added)

Claims 22 also recite the similar features.

Matsumoto do not teach that an overlay mark on the wafer has a positional shift that depends on the target consumption in the PVD process and a formula relating the two can be derived. Moreover, the position information of alignment marks of each line disclosed in Matsumoto is found by template matching method, but the present

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invention teaches that *an overlay mark on the wafer has a positional shift that depends on the target consumption in the PVD process and a formula relating the two can be derived*. The Matsumoto fails to teach or suggest the limitation of "an overlay mark on the wafer has a positional shift that depends on the target consumption in the PVD process and a formula relating the two can be derived" as required by the present invention, as set forth in claims 1 and 22. Further more, the Office Action indication "forming a photoresist layer (item#202) over the thin film (item#203)" but in Matsumoto reference the item #202 is exposure and the item 203 is resist treatment equipment. The step of "forming a photoresist layer over the thin film" disclosed in claims 1 and 22 aren't disclosed by Matsumoto.

For failing to teach each and every limitation of claim 1 and 22, Matsumoto does not *prima facie* anticipate the claimed invention, as set forth in claims 1, 22 and its dependent claims 2-9, and 23-31. Claims 2-9, and 23-31 are therefore submitted to be novel and unobvious over Matsumoto, or any of the other cited references, taken alone or in combination, and thus should be allowed.

With respect to claim 10, independent claim 10 recites the features as follows:

10. A method of forming an overlay mark on a wafer

having a material layer thereon, comprising the steps of:

...

performing a physical vapor deposition (PVD) process to form a second film layer over the first film layer, wherein the deposited second film layer causes a shift in an overlay mark such that the degree of shifting

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is related to the target consumption in the PVD process and a formula relating the two can be derived;  
... (Emphasis added)

Matsumoto do not teach that the deposited second film layer causes a shift in an overlay mark such that the degree of shifting is related to the target consumption in the PVD process and a formula relating the two can be derived." Moreover, the position information of alignment marks of each line disclosed in Matsumoto is found by template matching method, but the present invention teaches that *the deposited second film layer causes a shift in an overlay mark such that the degree of shifting is related to the target consumption in the PVD process and a formula relating the two can be derived.* The Matsumoto fails to teach or suggest the limitation of "the deposited second film layer causes a shift in an overlay mark such that the degree of shifting is related to the target consumption in the PVD process and a formula relating the two can be derived" as required by the present invention, as set forth in claim 10.

For failing to teach each and every limitation of claim 10, Matsumoto does not *prima facie* anticipate the claimed invention, as set forth in claims 10 and its dependent claims 11-21. Claims 11-21 are therefore submitted to be novel and unobvious over Matsumoto, or any of the other cited references, taken alone or in combination, and thus should be allowed.

For at least the foregoing reasons, Applicants respectfully submit that independent

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claims 1, 10 and 22 patently define over the prior art reference, and should be allowed.

For at least the same reasons, dependent claims 2-9, 11-21 and 23-31 patently define over the prior art as a matter of law.

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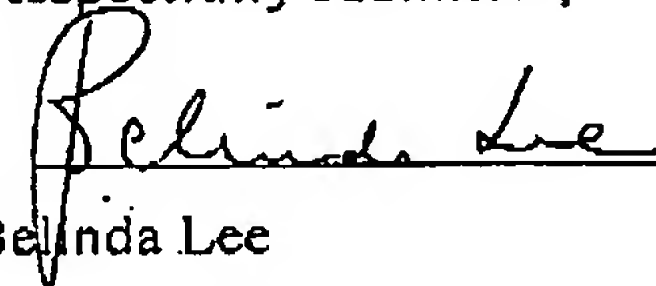
**CONCLUSION**

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a conference would be of value in expediting the prosecution of this application, he is cordially invited to telephone the undersigned counsel to arrange for such a conference.

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Respectfully submitted,

  
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